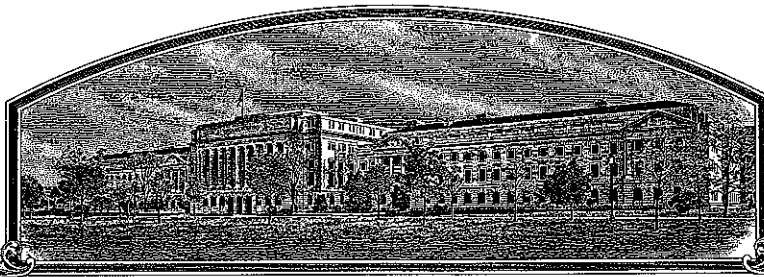


No.

200500136



# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Cotton Seed International Proprietary Limited (AQA 165 327 915)  
& Bayer Crop Science GmbH

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

COTTON

'FM 981LL'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this seventh day of August, in the year two thousand and six.

Attest:

Commissioner  
Plant Variety Protection Office  
Agricultural Marketing Service

Secretary of Agriculture

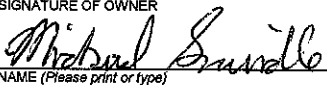


**U.S. DEPARTMENT OF AGRICULTURE**  
**AGRICULTURAL MARKETING SERVICE**  
**SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE**

**APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE**  
*(Instructions and information collection burden statement on reverse)*

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

|   |  |   |  |  |  |
|---|--|---|--|--|--|
| <b>1. NAME OF OWNER</b><br>Joint Owners<br>1. Cotton Seed International Proprietary Limited (ACN 065 327 915)<br>2. Bayer CropScience GmbH <i>4113106 PER EMAIL</i>   |  | <b>2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME</b><br>E1003LL   |  | <b>3. VARIETY NAME</b><br>FM 981LL   |  |
| <b>4. ADDRESS</b> (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)<br>1. Shenstone<br>Culgoora Road<br>Wee Waa, New South Wales 2388<br>Australia<br>2. Industriepark Höchst<br>K 607<br>Bruningstrasse 50<br>65926 Frankfurt am Main<br>Germany   |  | <b>5. TELEPHONE</b> (include area code)<br>(662) 686-9235<br><b>6. FAX</b> (include area code)<br>(662) 686-5605  |  | <b>FOR OFFICIAL USE ONLY</b><br><b>PVPO NUMBER</b><br>200500136<br><b>FILING DATE</b><br>FEBRUARY 14, 2005   |  |
| <b>7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION</b> (corporation, partnership, association, etc.)<br>Limited liability company  |  | <b>8. IF INCORPORATED, GIVE STATE OF INCORPORATION</b>  |  | <b>9. DATE OF INCORPORATION</b>  |  |
| <b>10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION.</b> (First person listed will receive all papers)<br>Michael Swindle<br>Cotton Breeder<br>Bayer Cotton Seed International<br>117 Kennedy Flat Road<br>Leland, MS 38756   |  | <b>FILING AND EXAMINATION FEES:</b><br>\$ 3,652.00<br>DATE 2/14/05<br><b>CERTIFICATION FEE:</b><br>\$ 768.00<br>DATE 5/5/06   |  |  |  |
| <b>11. TELEPHONE</b> (Include area code)<br>(662) 686-9235  |  | <b>12. FAX</b> (Include area code)<br>(662) 686-5605  |  | <b>13. E-MAIL</b><br>michael.swindle@bayercropscience.com  |  |
| <b>14. CROP KIND</b> (Common Name)<br>Upland Cotton   |  | <b>16. FAMILY NAME</b> (Botanical)<br>Malvaceae   |  | <b>18. DOES THE VARIETY CONTAIN ANY TRANSGENES? (OPTIONAL)</b><br><input checked="" type="checkbox"/> YES <input type="checkbox"/> NO<br>IF SO, PLEASE GIVE THE ASSIGNED USDA-APHIS REFERENCE NUMBER FOR THE APPROVED PETITION TO DEREGULATE THE GENETICALLY MODIFIED PLANT FOR COMMERCIALIZATION. No 02-042-01p |  |
| <b>15. GENUS AND SPECIES NAME OF CROP</b><br>Gossypium hirsutum cs  |  | <b>17. IS THE VARIETY A FIRST GENERATION HYBRID?</b><br><input type="checkbox"/> YES <input checked="" type="checkbox"/> NO   |  |  |  |
| <b>19. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED</b> (Follow instructions on reverse)<br>a. <input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety<br>b. <input checked="" type="checkbox"/> Exhibit B. Statement of Distinctness<br>c. <input checked="" type="checkbox"/> Exhibit C. Objective Description of Variety<br>d. <input checked="" type="checkbox"/> Exhibit D. Additional Description of the Variety (Optional)<br>e. <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of the Owner's Ownership<br>f. <input checked="" type="checkbox"/> Voucher Sample (2,500 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository)<br>g. <input checked="" type="checkbox"/> Filing and Examination Fee (\$3,652), made payable to "Treasurer of the United States" (Mail to the Plant Variety Protection Office) |  | <b>20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED?</b> (See Section 83(a) of the Plant Variety Protection Act)<br><input type="checkbox"/> YES (If "yes", answer items 21 and 22 below) <input checked="" type="checkbox"/> NO (If "no", go to item 23)<br><b>21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES?</b><br><input type="checkbox"/> YES <input type="checkbox"/> NO<br>IF YES, WHICH CLASSES? <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED<br><b>22. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?</b><br><input type="checkbox"/> YES <input type="checkbox"/> NO<br>IF YES, SPECIFY THE NUMBER 1,2,3, etc. FOR EACH CLASS.<br><input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED<br>(If additional explanation is necessary, please use the space indicated on the reverse.) |  |  |  |
| <b>23. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES?</b><br><input checked="" type="checkbox"/> YES <input type="checkbox"/> NO<br>IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. (Please use space indicated on reverse.)  |  | <b>24. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT (PLANT BREEDER'S RIGHT OR PATENT)?</b><br><input checked="" type="checkbox"/> YES <input type="checkbox"/> NO<br>IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. (Please use space indicated on reverse.)   |  |  |  |
| <b>25. The owners declare that a viable sample of basic seed of the variety has been furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.</b><br>The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.<br>Owner(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.  |  |   |  |  |  |
| <b>SIGNATURE OF OWNER</b><br>  |  | <b>SIGNATURE OF OWNER</b>   |  |  |  |
| <b>NAME</b> (Please print or type)<br>Michael Swindle   |  | <b>NAME</b> (Please print or type)  |  |  |  |
| <b>CAPACITY OR TITLE</b><br>Cotton Breeder  |  | <b>DATE</b><br>2/13/05  |  | <b>CAPACITY OR TITLE</b><br>Cotton Breeder   |  |
|   |  |   |  | <b>DATE</b>  |  |

(See reverse for instructions and information collection burden statement)

## INSTRUCTIONS

**GENERAL:** To be effectively filed with the Plant Variety Protection Office (PVPO), **ALL** of the following items must be **received** in the PVPO: (1) Completed application form signed by the owner; (2) completed exhibits A, B, C, E; (3) for a seed reproduced variety at least 2,500 viable untreated seeds, for a hybrid variety at least 2,500 untreated seeds of each line necessary to reproduce the variety, or for tuber reproduced varieties verification that a viable (in the sense that it will reproduce an entire plant) tissue culture will be deposited and maintained in an approved public repository; (4) check drawn on a U.S. bank for \$3,652 (\$432 filing fee and \$3,220 examination fee), payable to "Treasurer of the United States" (See Section 97.6 of the Regulations and Rules of Practice.) Partial applications will be held in the PVPO for not more than 90 days, then returned to the applicant as unfilled. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 401, NAL Building, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. Retain one copy for your files. All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. **DO NOT** use masking materials to make corrections. If a certificate is allowed, you will be requested to send a check payable to "Treasurer of the United States" in the amount of \$432 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

**Plant Variety Protection Office**

**Telephone: (301) 504-5518**

**FAX: (301) 504-5291**

**Homepage: <http://www.ams.usda.gov/science/pvpo/pvpindex.htm>**

To avoid conflict with other variety names in use, the applicant must check the appropriate recognized authority and provide evidence that name has been cleared by the appropriate recognized authority before the Certificate of Protection is issued. For example, for agricultural and vegetable crops, contact: Seed Branch, AMS, USDA, 10301 Baltimore Avenue, Suite 401 NAL Building, Beltsville, MD 20705. Telephone: (301) 504-5682 <http://www.ams.usda.gov/lsg/seed.htm>.

## ITEM

- 19a. Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method;  
(2) the details of subsequent stages of selection and multiplication;  
(3) evidence of uniformity and stability; and  
(4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified
- 19b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:  
(1) identify these varieties and state all differences objectively;  
(2) attach statistical data for characters expressed numerically and demonstrate that these are clear differences; and  
(3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness.
- 19c. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.
- 19d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.
- 19e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.
20. If "Yes" is specified (*seed of this variety be sold by variety name only, as a class of certified seed*), the applicant **MAY NOT** reverse this affirmative decision after the variety has been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. (See Regulations and Rules of Practice, Section 97.103).
23. See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.
24. See Section 55 of the Act for instructions on claiming the benefit of an earlier filing date.

**22. CONTINUED FROM FRONT** (Please provide a statement as to the limitation and sequence of generations that may be certified.)

**23. CONTINUED FROM FRONT** (Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.)

USA: 20 August 2004

**24. CONTINUED FROM FRONT** (Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).)

See attached page (form ST470 Line 24) attached page: Did not have enough room.

**NOTES:** It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment or owner's representative during the life of the application/certificate. The fees for filing a change of address; owner's representative; ownership or assignment; or any modification of owner's name is specified in Section 97.175 of the regulations. (See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of the Regulations and Rules of Practice.)

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 1.4 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, sexual orientation, marital or family status, political beliefs, parental status, or protected genetic information. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call 202-720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

**PLANT VARIETY PROTECTION APPLICATION**

Attached page from Form ST470 Line 24 continued

Bar Gene: Patent Number 5561236 Patent Date 01/10/1996  
Patent Number 5648477 Patent Date 15/07/1997  
Patent Number 5646024 Patent Date 08/07/1997

Event LL25: Patent Number 6818807 Patent Date 16/11/2004

FM 989 : PVP Number 9800259 PVP Date 3/03/2004

# PLANT VARIETY PROTECTION APPLICATION

## EXHIBIT A

### ORIGIN AND BREEDING HISTORY

**VARIETY: FM 981LL**

**BRAND: FiberMax<sup>®</sup>**

FM 981LL is among the first generation of LibertyLink<sup>®</sup> cotton seed varieties which are bred to utilize a new weed control technology for cotton. LibertyLink cotton contains a single, simply-inherited transgene, called LL25, which confers resistance to glufosinate-ammonium, the active ingredient in Ignite<sup>®</sup> herbicide sold by Bayer CropScience.

The LL25 transgene was introgressed (backcrossed) into E1003 [FM 989 (PVP#9800259)] beginning November 1998. All introgression work was done inside a glasshouse located at the Bayer Cotton Seed International-Delta Research Station near Leland, MS. After the initial cross between FM 989 and a Coker 312 donor parent harboring LL25 transgene, F<sub>1</sub> plants were backcrossed to FM 989 (Table 1). Throughout introgression, plants routinely were sprayed with Ignite herbicide to identify LL25 containing plants. Subsequent quality control (QC) measures were performed on all transgenic and non-transgenic parent plants to confirm presence of LL25 and absence of other potential contaminating transgenes. This procedure was continued until the BC<sub>3</sub> F<sub>1</sub> generation where plants were self-pollinated. Resulting BC<sub>3</sub>F<sub>2</sub> plants were sprayed with Ignite, and surviving plants were tested for transgene homozygosity. Homozygous plants were identified and harvested individually in 2000. Progeny from each homozygous plant constitute a sister-line. Evaluation for selection of individual homozygous plants and resulting sister-lines commenced immediately. Data such as percent lint and various fiber quality parameters were measured, and results were used to begin selection of lines similar or superior to FM 989. Lines from selected plants were further increased in counter-season nurseries in Costa Rica and in-season near Leland, MS, USA, in the winter of 2000-2001 and summer of 2001, respectively. Further seed increases for testing and pure-seed multiplication purposes were performed in 2002, 2003, and 2004 in both U.S. and counter-season locations. Internal multi-location, multi-year performance and evaluation trials were performed in order to select final line(s) that constitute the finished variety FM 981LL. These same trials also were used to evaluate performance of the new variety relative to existing commercial varieties. These sister-line trials and evaluations were performed in 2001, and 2002. New variety evaluations were performed in 2003 and 2004. FM 981LL also was tested in several states' public Official Variety Trials in 2003 and 2004. Commercial-scale seed increases commenced in 2002 in Arizona, followed by a counter-season increase in Costa Rica in winter of 2002-2003. Large-scale seed increases were made in various regions of the U.S. Cotton Belt in 2003, and the first commercial sales of FM 981LL were made in the spring of 2004.

Note that transgenic event LL25 received full regulatory approval from the USDA in March 2003. The assigned USDA-APHIS reference number for the approved petition to deregulate LLCotton25 is No 02-042-01p.

FM 981LL has been observed for six generations of reproduction and is stable and uniform. During this observation period, 100% of plants were observed to be tolerant to the glufosinate herbicide (Ignite). No variants were observed.

## PLANT VARIETY PROTECTION APPLICATION

Table 1. CONVENTIONAL BACKCROSSING SCHEME FOR LIBERTYLINK VARIETY DEVELOPMENT

## BREEDING PROGRESSION

| PLANT                          |      | Transgene Source                        | PRODUCE                        | QC                        | WHERE                           | YEAR      |
|--------------------------------|------|---|--------------------------------|---------------------------|---------------------------------|-----------|
| FM 989                         | X    |   |                                |                           |                                 |           |
| F <sub>1</sub>                 | X    | Recurrent Parent                        | F <sub>1</sub>                 | Trait, event<br>nontarget | glasshouse                      | 1998      |
| BC <sub>1</sub> F <sub>1</sub> | X    | Recurrent Parent                        | BC <sub>1</sub> F <sub>1</sub> | Trait, event<br>nontarget | glasshouse                      | 1999      |
| BC <sub>2</sub> F <sub>1</sub> | X    | Recurrent Parent                        | BC <sub>2</sub> F <sub>1</sub> | Trait, event<br>nontarget | glasshouse                      | 1999      |
| BC <sub>3</sub> F <sub>1</sub> | X    | Recurrent Parent                        | BC <sub>3</sub> F <sub>1</sub> | Trait, event<br>nontarget | glasshouse                      | 1999      |
| BC <sub>3</sub> F <sub>1</sub> | self | Self pollinate                          | BC <sub>3</sub> F <sub>2</sub> | Trait, event<br>nontarget | glasshouse                      | 2000      |
| BC <sub>3</sub> F <sub>2</sub> | self | Self pollinate etc.<br>Purify, Increase | F <sub>3</sub>                 | Trait, event<br>nontarget | glasshouse                      | 2000      |
| F <sub>3</sub>                 | self | Purify, Increase                        | F <sub>4</sub>                 | Trait                     | counter-season<br>in Costa Rica | 2000-2001 |
| F <sub>4</sub>                 | self | Trials, Increase                        | F <sub>5</sub>                 | Trait, event<br>nontarget | field in USA                    | 2001      |
| F <sub>5</sub>                 | self | Increase                                | F <sub>6</sub>                 | Trait                     | counter-season<br>in Costa Rica | 2001-2002 |
| F <sub>6</sub>                 | self | Trials, Increase                        | F <sub>7</sub>                 | Trait, nontarget          | field in USA                    | 2002      |
| F <sub>7</sub>                 | self | Increase                                | F <sub>8</sub>                 | Trait                     | counter-season<br>in Costa Rica | 2002-2003 |
| Etc.                           |      | Trials, Increase                        | Etc.                           | Trait                     | field in USA                    | 2003      |
| Etc.                           |      | Commercial Release                      | Etc.                           |                           | field in USA                    | 2004      |

**PLANT VARIETY PROTECTION APPLICATION****EXHIBIT B****NOVELTY STATEMENT****VARIETY: FM 981LL****BRAND: FiberMax®**

FM 981LL is similar and closely resembles DP 436RR, but can be distinguished from its comparator variety DP 436RR by the following. FM 981LL contains the single transgene LL25 from Bayer CropScience, while DP 436RR does not; FM 981LL has a longer and wider boll than DP 436RR; FM 981LL has a higher height to first fruiting branch than DP 436RR; FM 981LL sets fruit one node higher than DP 436RR; FM 981LL has longer peduncles than DP 436RR; FM 981LL has a higher lint percentage than DP 436RR; FM 981LL has a greater fiber strength than DP 436RR.

BCSI Research Station, Leland, MS 2004 Conditions: Planting date April 28, field grown irrigated trial with conventional management. Trial design for distinguishing characters: 5 entry trial in a row and column design with six replications and 14m plots. Measurements taken from 10 plants from each plot. Trial design for yield and fiber data: 32 entry trial, random complete block design with 3 replications and two 14m row plots.

BCSI Research Station, Leland, MS 2005 Conditions: Planting date May 18, field grown irrigated trial with conventional management. Trial design for distinguishing characters, yield and fiber: 32 entry trial, random complete block design with 3 replications and two 14m row plots. For distinguishing characters: measurements were taken from 10 plants, from each of the 14m plots.

Analysis of variance procedures were used to obtain least significant difference at the 5% level, using Agrobases software.



According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 2.75 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, sexual orientation, marital or family status, political beliefs, parental status, or protected genetic information. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call 202-720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

**U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
SCIENCE AND TECHNOLOGY  
PLANT VARIETY PROTECTION OFFICE  
BELTSVILLE, MD 20705**

Exhibit C

**OBJECTIVE DESCRIPTION OF VARIETY  
Cotton (*Gossypium* spp.)**

|  |   |  |
|--|---|--|
| NAME OF APPLICANT (S)<br><b>Bayer Cotton Seed International</b>  | TEMPORARY OR EXPERIMENTAL DESIGNATION<br><b>E1003LL</b> | VARIETY NAME<br><b>FM 981LL</b>                                  |
| ADDRESS (Street and No. or RD No., City, State, Zip Code and Country)<br><br><b>117 Kennedy Flat Road, Leland MS 38756</b> |   | FOR OFFICIAL USE ONLY<br><br>PVPO NUMBER<br><br><b>200500136</b> |

Place the appropriate data that describes the varietal characteristics of this variety in the space provided. Characteristics described, including numerical measurements, should represent those that are typical for the variety. Data for quantitative plant characters should be based on a minimum of 100 plants. Royal Horticultural Society or any recognized color chart may be used to determine plant colors.

**SPECIFIC VARIETIES USED FOR COMPARISON AS CHECK VARIETIES IN THIS APPLICATION:** Use standard regional check varieties that are adapted to your area. One of the comparison varieties must be the most similar variety (MSV) used in Exhibit B.

MSV 1. Delta Pineland DP 436R Variety 2. \_\_\_\_\_ Variety 3. \_\_\_\_\_

**1. SPECIES:**

☒ X *G. hirsutum* L. ☐ *G. barbadense* L.

**2. AREA(S) OF ADAPTATION (A = Adapted, NA = Not Adapted, NT = Not Tested):**

|                                      |                  |                   |                       |
|--------------------------------------|------------------|-------------------|-----------------------|
| <u>A</u> Eastern                     | <u>A</u> Delta   | <u>A</u> Central  | <u>NT</u> Blacklands  |
| <u>A</u> Plains                      | <u>A</u> Western | <u>NA</u> Arizona | <u>NA</u> San Joaquin |
| <u>      </u> Other (Specify): _____ |                  |                   |                       |

**3. GENERAL: General Plant Type**

|   | Application Variety | MSV 1               | Comparison Variety 2 | Comparison Variety 3 |
|---|---------------------|---------------------|----------------------|----------------------|
| <b>Plant Habit:</b><br>Spreading, Intermediate,<br>Compact    | <u>Compact</u>      | <u>Intermediate</u> | _____                | _____                |
| <b>Foliage:</b><br>Sparse, Intermediate,<br>Dense             | <u>Intermediate</u> | <u>Intermediate</u> | _____                | _____                |
| <b>Stem Lodging:</b><br>Lodging, Intermediate,<br>Erect       | <u>Erect</u>        | <u>Erect</u>        | _____                | _____                |
| <b>Fruiting Branch:</b><br>Clustered, Short, Normal           | <u>Short</u>        | <u>Normal</u>       | _____                | _____                |
| <b>Growth:</b><br>Determinate, Intermediate,<br>Indeterminate | <u>Intermediate</u> | <u>Intermediate</u> | _____                | _____                |

8

**3. GENERAL:** (continued)

|  | Application Variety | MSV 1        | Comparison Variety 2 | Comparison Variety 3 |
|--|---------------------|--------------|----------------------|----------------------|
| <b>Leaf Color:</b><br>Greenish yellow, Light green,<br>Medium green, Dark green                | Medium Green        | Medium Green |                      |                      |
| <b>Boll Shape:</b> Length less than width,<br>Length equal to width,<br>Length more than width | Length>Width        | Length>Width |                      |                      |
| <b>Boll Breadth:</b><br>Broadest at base,<br>Broadest at middle                                | Middle              | Middle       |                      |                      |

**4. MATURITY:** (50% Open bolls; Preferred method; Describe method if different method was used)

|                                |              |              |  |  |
|--------------------------------|--------------|--------------|--|--|
| <b>Date of 50% open bolls:</b> | 21 September | 13 September |  |  |
|--------------------------------|--------------|--------------|--|--|

**5. PLANT:**

|  |       |       |  |  |
|--|-------|-------|--|--|
| <b>cm to 1st Fruiting Branch:</b><br>(from cotyledonary node)                | 17.6  | 13.6  |  |  |
| <b>No. of Nodes to 1st Fruiting Branch:</b><br>(excluding cotyledonary node) | 7.1   | 5.89  |  |  |
| <b>Mature Plant Height cm:</b><br>(from cotyledonary node<br>to terminal)    | 118.2 | 108.6 |  |  |

**6. LEAF:** (Upper most fully expanded leaf)

|   |         |         |  |  |
|---|---------|---------|--|--|
| <b>Type:</b> Normal, Sub Okra,<br>Okra, Super Okra  | Normal  | Normal  |  |  |
| <b>Pubescence:</b> Absent, Sparse,<br>Medium, Dense <b>OR</b> Trichomes/cm <sup>2</sup><br>(Bottom surface excluding veins) | Sparse  | Sparse  |  |  |
| <b>Nectaries:</b> Present or Absent   | Present | Present |  |  |

**7. STEM PUBESCENCE:**

|                                  |              |              |  |  |
|----------------------------------|--------------|--------------|--|--|
| Glabrous, Intermediate,<br>Hairy | Intermediate | Intermediate |  |  |
|----------------------------------|--------------|--------------|--|--|

**8. GLANDS:** (Gossypol) Absent, Sparse, Normal, More than Normal

|                                       |               |               |  |  |
|---------------------------------------|---------------|---------------|--|--|
| <b>Leaf:</b>                          | Normal        | Normal        |  |  |
| <b>Stem:</b>                          | Normal        | Normal        |  |  |
| <b>Calyx Lobe:</b> (normal is absent) | Absent/Normal | Absent/Normal |  |  |

**9. FLOWER:**

|                                    |        |        |  |  |
|------------------------------------|--------|--------|--|--|
| <b>Petals:</b> Cream, Yellow       | Cream  | Cream  |  |  |
| <b>Pollen:</b> Cream, Yellow       | Cream  | Cream  |  |  |
| <b>Petal Spot:</b> Present, Absent | Absent | Absent |  |  |

**10. SEED:**

|  |      |      |  |  |
|--|------|------|--|--|
| <b>Seed Index:</b><br>(g/100 seeds, fuzzy basis) | 11.2 | 10.7 |  |  |
| <b>Lint Index:</b><br>(g lint/100 seeds)         | 6.79 | 6.2  |  |  |

**11. BOLL:****Lint Percent:**

|  |                                 |       |       |  |  |
|--|---------------------------------|-------|-------|--|--|
| <input checked="" type="checkbox"/> Picked | <input type="checkbox"/> Pulled | 37.10 | 35.35 |  |  |
|--|---------------------------------|-------|-------|--|--|

OR

**Gin Turnout:**

|                                 |                                   |  |  |  |  |
|---------------------------------|-----------------------------------|--|--|--|--|
| <input type="checkbox"/> Picked | <input type="checkbox"/> Stripped |  |  |  |  |
|---------------------------------|-----------------------------------|--|--|--|--|

|                          |      |      |  |  |
|--------------------------|------|------|--|--|
| Number of Seeds per Boll | 29.9 | 33.7 |  |  |
|--------------------------|------|------|--|--|

|                            |     |     |  |  |
|----------------------------|-----|-----|--|--|
| Grams Seed Cotton per Boll | 5.2 | 5.6 |  |  |
|----------------------------|-----|-----|--|--|

|                            |     |     |  |  |
|----------------------------|-----|-----|--|--|
| Number of Locules per Boll | 4.2 | 4.2 |  |  |
|----------------------------|-----|-----|--|--|

**Boll Type:**

|                                    |              |      |  |  |
|------------------------------------|--------------|------|--|--|
| Stormproof, Storm Resistant, Open) | Storm Resist | Open |  |  |
|------------------------------------|--------------|------|--|--|

**12. FIBER PROPERTIES:**

Specify Method (HVI or Other):

HVI

|                           |      |      |  |  |
|---------------------------|------|------|--|--|
| Length: (inches, 2.5% SL) | 1.19 | 1.17 |  |  |
|---------------------------|------|------|--|--|

|                 |      |      |  |  |
|-----------------|------|------|--|--|
| Uniformity (%): | 84.4 | 84.5 |  |  |
|-----------------|------|------|--|--|

|                      |      |      |  |  |
|----------------------|------|------|--|--|
| Strength, T1 (g/tex) | 34.5 | 28.6 |  |  |
|----------------------|------|------|--|--|

|                    |     |     |  |  |
|--------------------|-----|-----|--|--|
| Elongation, E1 (%) | 8.0 | 8.2 |  |  |
|--------------------|-----|-----|--|--|

|             |     |     |  |  |
|-------------|-----|-----|--|--|
| Micronaire: | 4.6 | 4.7 |  |  |
|-------------|-----|-----|--|--|

|                         |  |  |  |  |
|-------------------------|--|--|--|--|
| Fineness (Source _____) |  |  |  |  |
|-------------------------|--|--|--|--|

|                                 |  |  |  |  |
|---------------------------------|--|--|--|--|
| Yarn Tenacity: (cN/tex, 27 tex) |  |  |  |  |
|---------------------------------|--|--|--|--|

|                            |  |  |  |  |
|----------------------------|--|--|--|--|
| Yarn Strength: (lbs. 22's) |  |  |  |  |
|----------------------------|--|--|--|--|

**13. DISEASES: (0 = Not Tested, 1 = Susceptible, 2 = Moderately Susceptible, 3 = Moderately Resistant, 4 = Resistant)**0 *Alternaria macrospora*2 *Fusarium Wilt*0 *Anthracnose*0 *Phymatotrichum Root Rot*0 *Ascochyta Blight*0 *Pythium* (specify species)4 *Bacterial Blight* (Race 1)0 *Rhizoctonia solani*4 *Bacterial Blight* (Race 2)0 *Southwestern Cotton Rust*4 *Bacterial Blight* (Race \_\_\_\_\_)0 *Thielaviopsis basicola*0 *Diplodia Boll Rot*3 *Verticillium Wilt*

\_\_\_\_ Other (Specify) \_\_\_\_\_

**14. NEMATODES, INSECTS AND PESTS:** (1 = Not Tested, 2 = Susceptible, 3 = Moderately Susceptible, 4 = Moderately Resistant, 5 = Resistant)3 ☒ Root-Knot Nematode1 ☒ Boll Weevil1 ☐ Bollworm1 ☒ Cotton Aphid1 ☒ Cotton Fleahopper1 ☒ Cotton Leafworm1 ☒ Cutworm (specify species): \_\_\_\_\_1 ☒ Fall Armyworm1 ☒ Other (Specify) \_\_\_\_\_1 ☒ Reniform Nematode1 ☒ Grasshopper (specify species): \_\_\_\_\_1 ☒ Lygus (specify species): \_\_\_\_\_1 ☒ Pink Bollworm1 ☒ Spider Mite (specify species): \_\_\_\_\_1 ☒ Stink Bug (specify species): \_\_\_\_\_1 ☒ Thrips (specify species): \_\_\_\_\_1 ☒ Tobacco Bud Worm**15. COMMENTS:** Present any additional information that cannot adequately be described in 1 through 13, which significantly distinguished your variety.

## **PLANT VARIETY PROTECTION APPLICATION**

### **APPENDIX A**

#### **SOURCE OF DATA AND STATISTICAL ANALYSIS FOR EXHIBIT B AND EXHIBIT C**

Descriptions of general characteristics, and of leaf, stem, gland and flower characteristics, along with plant description information (height and nodes to first fruiting branch, and final mature plant height) were collected from 10 plants in each 6 replications. The field trial was designed specifically for these measurements in 2004 and taken from an internal trial in 2005 at the Bayer Cotton Seed International-Delta Research Station, Leland, MS (Tables 2 & 3). Soil type at this location is a Boskett very-fine, sandy-loam. Other data obtained from these plots were measurements of maturity differences, lint percent and fiber properties. Results of statistical analyses are found in Table 4.

Internal data was collected for lint yield per acre (3-replications) from six locations (Wilson, AR; Tunica, MS; Clarksdale, MS; Leland, MS; Thornton, MS; St. Joseph, LA) in 2004, and four locations (Alamo, TN; Clarksdale, MS; Leland, MS; Tallulah, LA) in 2005 (Tables 5 & 6). In addition, fiber data from these locations can be found in Tables 7 & 8. Additional morphological data was taken as visual ratings regarding strain uniformity, plant height, disease reaction, visual maturity, plant type, boll type, boll size, leaf pubescence, stalk lodging, agronomic appeal, and leaf type were made only at Leland, MS, for two years, 2004-05 (Tables 9 & 10). A key for the rating can be found in Table 11.

Information on reaction to Fusarium wilt disease was obtained from the Auburn University 2004 National Cotton Fusarium Wilt Report (Table 12). Information on reaction to Bacterial Blight disease was obtained from the Texas A&M Agricultural Experiment Station Lubbock, TX, 2004 Blight Test (Table 13).

## PLANT VARIETY PROTECTION APPLICATION

**TABLE 2. PLANT MEASUREMENT ANALYSIS PVP TRIAL -LELAND, MS 2004**

| ENTRY_NAME | BOLL_LEN<br>(mm) | BOLL_WID<br>(mm) | CMFB<br>(cm) | NFB<br>(cm) | HT<br>(cm) | FB1<br>(cm) | PED<br>(mm) | LOCKS_BOLL<br>(number) | ST_LEN<br>(mm) |
|------------|------------------|------------------|--------------|-------------|------------|-------------|-------------|------------------------|----------------|
| FM 981LL   | 2.04             | 1.33             | 19.31        | 6.63        | 119.45     | 11.95       | 2.46        | 4.18                   | 2.43           |
| DP 436RR   | 1.90             | 1.22             | 14.88        | 5.77        | 113.28     | 11.80       | 2.00        | 4.03                   | 2.20           |
| GRAND MEAN | 1.97             | 1.29             | 18.48        | 6.63        | 118.41     | 11.71       | 2.43        | 4.20                   | 3.01           |
| C.V.,%     | 2.90             | 2.91             | 7.45         | 4.33        | 4.37       | 5.62        | 6.30        | 4.50                   | 15.62          |
| LSD (0.05) | 0.07             | 0.05             | 1.66         | 0.35        | 6.23       | 0.79        | 0.18        | 0.23                   | 0.57           |

**TABLE 3. PLANT MEASUREMENT ANALYSIS PVP TRIAL -LELAND, MS 2005**

| ENTRY_NAME | BOLL_LEN<br>(mm) | BOLL_WID<br>(mm) | CMFB<br>(cm) | NFB<br>(cm) | HT<br>(cm) | FB1<br>(cm) | PED<br>(mm) | LOCKS_BOLL<br>(number) | ST_LEN<br>(mm) |
|------------|------------------|------------------|--------------|-------------|------------|-------------|-------------|------------------------|----------------|
| FM 981LL   | 1.98             | 1.38             | 15.78        | 7.47        | 117.00     | 8.99        | 2.17        | 4.27                   | 2.60           |
| DP 436RR   | 1.83             | 1.31             | 12.38        | 6.03        | 104.43     | 6.55        | 2.06        | 4.27                   | 2.77           |
| GRAND MEAN | 1.95             | 1.36             | 15.68        | 7.32        | 114.65     | 8.81        | 2.26        | 4.34                   | 3.49           |
| C.V.,%     | 1.56             | 1.55             | 14.69        | 5.99        | 4.03       | 19.70       | 5.30        | 2.42                   | 11.48          |
| LSD (0.05) | 0.06             | 0.04             | 4.34         | 0.83        | 8.70       | 3.27        | 0.23        | 0.20                   | 0.75           |

200500136

# PLANT VARIETY PROTECTION APPLICATION

TABLE 4. FIBER AND BOLL TRAITS FROM PVP TRIAL-LELAND, MS 2004

| Entry Name | Lint % | Length<br>(in) | Len. Unif<br>(%) | Strength<br>(g/tex) | Elongation<br>(%) | Micronaire | Seed Index | Boll Size<br>(g) |
|------------|--------|----------------|------------------|---------------------|-------------------|------------|------------|------------------|
|            |        |                |                  |                     |                   |            |            |                  |
| FM 981LL   | 36.5   | 1.22           | 85.1             | 33.4                | 7.6               | 4.1        | 11.7       | 5.6              |
| DP 436RR   | 35.7   | 1.20           | 85.4             | 26.0                | 7.7               | 4.5        | 11.1       | 5.7              |
| Mean       | 37.9   | 1.22           | 85.7             | 31.9                | 7.6               | 4.3        | 11.3       | 5.8              |
| C.V., %    | 2.4    | 2.2            | 0.6              | 2.7                 | 2.8               | 5.1        | 4.8        | 14.4             |
| LSD (0.05) | 0.7    | 0.02           | 0.4              | 0.7                 | 0.2               | 0.2        | 0.4        | 0.6              |

## PLANT VARIETY PROTECTION APPLICATION

**TABLE 5. 2004 TRANSGENIC COMMERCIAL VARIETY TRIAL - HERBICIDE TOLERANT - BCSI DRS (MS DELTA)**

YIELD DATA ACROSS ALL LOCATIONS

| ENTRY NAME | MEAN % LINT | MEAN LOCS | LBS LINT/ACRE |           |               |           |             |             |
|------------|-------------|-----------|---------------|-----------|---------------|-----------|-------------|-------------|
|            |             |           | MS Leland     | AR Wilson | MS Clarksdale | MS Tunica | MS Thornton | LA StJoseph |
| FM 981LL   | 37.7        | 1071      | 1377          | 966       | 1039          | 942       | 1324        | 1036        |
| FM 989     | 38.5        | 1122      | 1391          | 1117      | 1106          | 1169      | 1486        | 1159        |
| DP 436RR   | 35.5        | 1125      | 1363          | 1240      | 1097          | 840       | 990         | 1143        |
| GRAND MEAN | 39.6        | 1216      | 1448          | 1152      | 1228          | 1015      | 1274        | 1175        |
| C.V.,%     | 1.8         | 10.4      | 8.1           | 10.1      | 8.4           | 12.0      | 13.9        | 9.0         |
| LSD (0.05) | 0.3         | 60        | 138           | 136       | 121           | 143       | 208         | 125         |

**TABLE 6. 2005 TRANSGENIC COMMERCIAL VARIETY TRIAL - HERBICIDE TOLERANT - BCSI DRS (MS DELTA)**

YIELD DATA ACROSS ALL LOCATIONS

| ENTRY NAME | MEAN % LINT | MEAN LOCS | LBS LINT/ACRE |               |             |          |  |
|------------|-------------|-----------|---------------|---------------|-------------|----------|--|
|            |             |           | MS Leland     | MS Clarksdale | LA Tallulah | TN Alamo |  |
| FM 981LL   | 36.4        | 915       | 790           | 689           | 1104        | 1041     |  |
| FM 989     | 38.1        | 930       | 838           | 771           | 1137        | 1101     |  |
| DP 436RR   | 35.2        | 980       | 1050          | 665           | 1176        | 960      |  |
| GRAND MEAN | 38.5        | 1044      | 1003          | 818           | 1242        | 1114     |  |
| C.V.,%     | 2.3         | 12.1      | 9.0           | 12.0          | 7.0         | 11.1     |  |
| LSD (0.05) | 0.6         | 85        | 124           | 132           | 126         | 169      |  |

200500136



# PLANT VARIETY PROTECTION APPLICATION

TABLE 7. 2004 TRANSGENIC COMMERCIAL VARIETY TRIAL - HERBICIDE TOLERANT - BCSI DRS (MS DELTA)

## FIBER DATA ACROSS ALL LOCATIONS

| ENTRY NAME | BOLL SIZE<br>(g) | MEAN HVI FIBER QUALITY |             |                  |              |
|------------|------------------|------------------------|-------------|------------------|--------------|
|            |                  | LEN<br>(in)            | UNIF<br>(%) | STREN<br>(g/tex) | ELONG<br>(%) |
| FM 981LL   | 5.2              | 1.19                   | 84.8        | 34.2             | 7.6          |
| FM 989     | 5.2              | 1.19                   | 85.3        | 33.6             | 7.8          |
| DP 436RR   | 5.9              | 1.17                   | 84.9        | 29.5             | 8.0          |
| GRAND MEAN | 5.4              | 1.17                   | 84.8        | 32.2             | 7.8          |
| C.V., %    | 16.5             | 2.1                    | 0.7         | 6.2              | 3.7          |
| LSD (0.05) | 0.5              | 0.02                   | 0.4         | 1.4              | 0.2          |
|            |                  |                        |             |                  | 0.1          |

TABLE 8. 2005 TRANSGENIC COMMERCIAL VARIETY TRIAL - HERBICIDE TOLERANT - BCSI DRS (MS DELTA)

## FIBER DATA ACROSS ALL LOCATIONS

| ENTRY NAME | BOLL SIZE<br>(g) | MEAN HVI FIBER QUALITY |             |                  |              |
|------------|------------------|------------------------|-------------|------------------|--------------|
|            |                  | LEN<br>(in)            | UNIF<br>(%) | STREN<br>(g/tex) | ELONG<br>(%) |
| FM 981LL   | 5.2              | 1.18                   | 84.0        | 34.7             | 8.4          |
| FM 989     | 4.9              | 1.18                   | 84.9        | 35.0             | 8.3          |
| DP 436RR   | 5.2              | 1.16                   | 84.1        | 27.6             | 8.3          |
| GRAND MEAN | 5.1              | 1.17                   | 84.4        | 31.8             | 8.2          |
| C.V., %    | 9.2              | 1.7                    | 0.8         | 4.1              | 2.5          |
| LSD (0.05) | 0.3              | 0.02                   | 0.5         | 1.0              | 0.2          |
|            |                  |                        |             |                  | 0.2          |

200500136

## PLANT VARIETY PROTECTION APPLICATION

**TABLE 9. 2004 TRANSGENIC COMMERCIAL VARIETY TRIAL - HERBICIDE TOLERANT - BCSI DRS (MS DELTA)**

MORPHOLOGICAL DATA-LELAND, MS 2004

| ENTRY NAME | STR UNIF | PLT HT | DIS RXN | MAT PCT | PLT TYPE | BOLL TYPE | VBOLL SIZE | LEAF_PUB | STLK LOG | AGR APP | LEAF TYPE |
|------------|----------|--------|---------|---------|----------|-----------|------------|----------|----------|---------|-----------|
| FM 981LL   | 1        | 5      | 1       | 50      | 6        | 5         | 5          | 7        | 2        | 5       | Normal    |
| FM 989     | 1        | 5      | 1       | 50      | 6        | 5         | 5          | 7        | 2        | 5       | Normal    |
| DP 436RR   | 1        | 5      | 1       | 80      | 9        | 3         | 2          | 8        | 1        | 4       | Normal    |

**TABLE 10. 2005 TRANSGENIC COMMERCIAL VARIETY TRIAL - HERBICIDE TOLERANT - BCSI DRS (MS DELTA)**

MORPHOLOGICAL DATA-LELAND, MS 2005

| ENTRY NAME | STR UNIF | PLT HT | DIS RXN | MAT PCT | PLT TYPE | BOLL TYPE | VBOLL SIZE | LEAF_PUB | STLK LOG | AGR APP | LEAF TYPE |
|------------|----------|--------|---------|---------|----------|-----------|------------|----------|----------|---------|-----------|
| FM 981LL   | 1        | 5      | 1       | 50      | 5        | 5         | 6          | 8        | 3        | 5       | Normal    |
| FM 989     | 1        | 5      | 1       | 50      | 5        | 5         | 5          | 8        | 2        | 5       | Normal    |
| DP 436RR   | 2        | 6      | 1       | 70      | 8        | 3         | 4          | 8        | 3        | 5       | Normal    |

200500136

# PLANT VARIETY PROTECTION APPLICATION

TABLE 11. VISUAL FIELD RATINGS KEY

|                          |               |                     |                   |
|--------------------------|---------------|---------------------|-------------------|
| Strain Uniformity        | 1=uniform     | 5=slightly variable | 9=highly variable |
| Plant Height             | 1=short       | 5=normal (check)    | 9=rank            |
| Disease Reaction         | 1=no symptoms | 5=some symptoms     | 9=severe          |
| Maturity (PERCENT OPEN)* | 10%= late     | 50%=mid             | 90%=very early    |
| Plant Type               | 1=cluster     | 5=intermediate      | 9=open            |
| Boll Type                | 1=loose       | 5=intermediate      | 9=storm proof     |
| Boll Size                | 1=small       | 5=intermediate      | 9=large           |
| Leaf Pubescence          | 1=pubescent   | 5=semi-smooth       | 9=glabrous        |
| Stalk Lodging            | 1=upright     | 5=slightly lodged   | 9=severely lodged |
| Agronomic Appeal         | 1=poor        | 5=avg.              | 9=excellent       |
| Leaf Type                | 1=hirsute     | 2=okra              | 3=mixed           |

\* Taken @ 130 days after planting

# PLANT VARIETY PROTECTION APPLICATION

## PUBLISHED DATA

**TABLE 12. 2004 Fusarium Wilt Test, Plant Breeding Unit, EVSRC, Tallassee, AL.**

| Plot No.   | Line Designation | Variety  | Percent wilted plants |       |       |       |       | Avg. | P-value |
|------------|------------------|----------|-----------------------|-------|-------|-------|-------|------|---------|
|            |                  |          | rep 1                 | rep 2 | rep 3 | rep 4 | rep 5 |      |         |
| 2601       | BCSI-MS-1        | FM 981LL | 31                    | 55    | 28    | 10    | 31    | 31   | 0.002   |
| Suceptible | Check            | Rowden   | 92                    | 89    | 64    | 38    | 71    | 71   | <.0001  |
| Resistant  | Check            | M-315    | 0                     | 0     | 0     | 5     | 1     | 1    | 0.885   |

**TABLE 13. 2004 Bacterial Blight Trial, Texas A&M Agricultural Experimental Station, Lubbock, TX.**

**Test Note:**

The 2004 blight test consisted of 42 entries, including a susceptible (PM 2326 RR) and resistant (TAMCOT Sphinx) control. The frequent rain events created some problems with the applications, and resulted in symptoms being slower to develop and developing on lower leaves than in most years. However, it was still possible to differentiate between susceptible or resistant classes. The bacteria used was IS-15, which was initially isolated from the High Plains, applied at 1,000,000 bacteria/ml of water, using 50 gal of water/acre, applied at a pressure of 20 psi.

| Entry | Designation       | Blight rating | Description         |
|-------|-------------------|---------------|---------------------|
| 32    | Paymaster 2326 RR | 0.98 ab       | Susceptible         |
| 19    | FiberMax 981LL    | 0.45 d        | Partially Resistant |
| 42    | Tamcot Sphinx     | 0.00 f        | Resistant           |
|       |                   | MSD           | 0.08                |

MSD is the minimum significant difference, based upon the Waller-Duncan k-ratio t-test ( $P = 0.05$ ).

200500136

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). The information is held confidential until the certificate is issued (7 U.S.C. 2426).

**EXHIBIT E**  
**STATEMENT OF THE BASIS OF OWNERSHIP**

## 1. NAME OF APPLICANT(S)

Joint Owners 1. Cotton Seed International Proprietary Limited  
(ACN 065 327 915) 2. Bayer CropScience GmbH2. TEMPORARY DESIGNATION  
OR EXPERIMENTAL NUMBER

E1003LL

## 3. VARIETY NAME

FM 981LL

## 4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country)

## 1. Shenstone

Culgoora Road  
Wee Waa, New South Wales 2388  
Australia

## 2. Industriepark Hochst

K 607  
Bruningstrasse 50  
65926 Frankfurt am Main  
Germany

## 5. TELEPHONE (Include area code)

(662) 686-9235

## 6. FAX (Include area code)

(662) 686-5605

## 7. PVPO NUMBER

200500136

8. Does the applicant own all rights to the variety? Mark an "X" in the appropriate block. If no, please explain.

☒ YES☐ NO

As a part of a joint venture company. FM 981LL, is an essentially derived variety version of FM 989.

9. Is the applicant (individual or company) a U.S. national or a U.S. based company? If no, give name of country.

☐ YES☒ NO

1. Australia 2. Germany

10. Is the applicant the original owner?

☒ YES☐ NOIf no, please answer one of the following:

a. If the original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. National(s)?

☐ YES☒ NO

If no, give name of country

1. Australia 2. Germany

b. If the original rights to variety were owned by a company(ies), is (are) the original owner(s) a U.S. based company?

☐ YES☒ NO

If no, give name of country

1. Australia 2. Germany

11. Additional explanation on ownership (Trace ownership from original breeder to current owner. Use the reverse for extra space if needed):

FM 981LL was developed solely by the faculty of Bayer Cotton Seed International, MS, 117 Kennedy Flat Road, Leland, MS 39756. The original variety, FM 989, was developed solely by CSIRO of Australia. The joint owners retains all commercial rights and privileges of the original and all derived varieties.

**PLEASE NOTE:**

Plant variety protection can only be afforded to the owners (not licensees) who meet the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed the final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definitions.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 0.1 hour per response, including the time for reviewing the instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, sexual orientation, marital or family status, political beliefs, parental status, or protected genetic information. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, D.C. 20250-9410 or call (202) 720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.